

WHAT IS CLAIMED AS NEW AND DESIRED TO BE PROTECTED BY LETTERS
PATENT OF THE UNITED STATES OF AMERICA, IS:

1. An expandable/contractible universal thermal bulkhead assembly for use within refrigerated cargo containers having different predetermined interior width and height dimensions as respectively defined between oppositely disposed side wall members, and between oppositely disposed floor and ceiling members, comprising:
- 5 a first thermal bulkhead member having predetermined height and width dimensions;
- first means bendably disposed upon an upper end
10 portion of said first thermal bulkhead member for effectively varying said predetermined height dimension of said first thermal bulkhead member, when said first means is bent from a first position to a second position, and for resiliently engaging the ceiling member of the refrigerated cargo container;
15 er;
- a second thermal bulkhead member having predetermined height and width dimensions;
- second means bendably disposed upon an upper end
20 portion of said second thermal bulkhead member for effectively varying said predetermined height dimension of said second thermal bulkhead member, when said second means is bent from a first position to a second position, and for resiliently engaging the ceiling member of the refrigerated cargo container; and
- 25 means for adjustably connecting said first thermal bulkhead member with respect to said second thermal bulkhead member so as to adjustably vary the overall width dimension

of said thermal bulkhead assembly, as defined by said first and second thermal bulkhead members, whereby said thermal bulkhead assembly comprises a universal thermal bulkhead assembly which can extend between and engage the oppositely disposed side wall members, and which can extend between and engage the oppositely disposed floor and ceiling members, of a refrigerated cargo container regardless of the fact that different refrigerated cargo containers can have different predetermined interior width and height dimensions as respectively defined between the oppositely disposed side wall members, and between the oppositely disposed floor and ceiling members.

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2. The universal thermal bulkhead assembly as set forth in Claim 1, wherein:

said first and second thermal bulkhead members are disposed in a laterally overlapped mode so as to adjustably vary said overall width dimension of said thermal bulkhead assembly; and

said means for adjustably connecting said first thermal bulkhead member with respect to said second thermal bulkhead member is selected from the group comprising at least one S-shaped tensioning strap, at least one C-shaped tensioning strap, and male and female fastening members.

30 3. The universal thermal bulkhead assembly as set forth in Claim 1, wherein:

said first means bendably disposed upon said upper end portion of said first thermal bulkhead member, and said second means bendably disposed upon said upper end portion of said second thermal bulkhead member, comprise spring members.

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4. The universal thermal bulkhead assembly as set forth in Claim 3, wherein each one of said first and second spring members comprises:

a central, internal core spring member; and
an external foam blanket enveloping said central, internal core spring member.

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5. The universal thermal bulkhead assembly as set forth in Claim 4, wherein:

said external foam blanket comprises a foam member selected from a group comprising open-cell and closed-cell foams.

25 6. The universal thermal bulkhead assembly as set forth in Claim 4, wherein:

said central, internal core spring member comprises an array of leaf spring members.

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7. The universal thermal bulkhead assembly as set forth in Claim 4, wherein:

said central, internal core spring member comprises an array of wire-form spring members.

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8. The universal thermal bulkhead assembly as set forth in Claim 1, wherein each one of said first and second thermal bulkhead members comprises:

a pair of laterally spaced, oppositely disposed plastic sheets; and

a foam core member interposed between said pair of laterally spaced, oppositely disposed plastic sheets.

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9. The universal thermal bulkhead assembly as set forth in Claim 8, further comprising:

stiffener rib means interposed between said pair of laterally spaced, oppositely disposed plastic sheets for maintaining the structural integrity of each one of said first and second thermal bulkhead members.

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10. The universal thermal bulkhead assembly as set forth in Claim 9, wherein:

said stiffener rib means, interposed between said pair of laterally spaced, oppositely disposed plastic sheets, is interposed between sections of said foam core member and

is not fixedly connected to said pair of laterally spaced, oppositely disposed plastic sheets.

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11. The universal thermal bulkhead assembly as set forth in Claim 1, wherein:

each one of said first and second thermal bulkhead members is symmetrical and reversible wherein each side edge portion of each one of said first and second thermal bulkhead members may be disposed toward either one of the left and right side walls of the refrigerated cargo container, and each side surface of each one of said first and second thermal bulkhead members may be disposed toward either one of the front and rear walls of the refrigerated cargo container; and

said first and second means, respectively bendably disposed upon said upper end portions of said first and second thermal bulkhead members between said first and second positions, can be bent in either one of two opposite directions so as to resiliently engage the ceiling member of the refrigerated cargo container.

12. The universal thermal bulkhead assembly as set forth in Claim 11, further comprising:

adjustment strap means mounted upon said first and second thermal bulkhead members and operatively connected to said first and second means respectively bendably disposed upon said upper end portions of said first and second thermal bulkhead members for implementing bending movements of said

first and second means between said first and second positions in said opposite directions.

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13. The universal thermal bulkhead assembly as set forth in Claim 1, further comprising:

handle means fixedly mounted upon opposite side surfaces of said first and second thermal bulkhead members
10 for facilitating the movement of said first and second thermal bulkhead members within the refrigerated cargo container.

15 14. The universal thermal bulkhead assembly as set forth in Claim 2, further comprising:

side edge seal means, disposed upon opposite side edge portions of each one of said first and second thermal bulkhead members, for defining sealed engagement with the oppositely disposed side walls of the refrigerated cargo container, as well as for defining sealed engagement between
20 side edge seal means disposed at the center of said universal thermal bulkhead assembly when said first and second thermal bulkhead members are disposed in said laterally overlapped
25 mode with respect to each other.

15. The universal thermal bulkhead assembly as set forth in Claim 14, wherein:

each one of said side edge seal means is encased

within a fabric coated with a material selected from the group comprising neoprene, butyl, styrene-butadiene rubbers.

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16. The universal thermal bulkhead assembly as set forth in Claim 15, wherein:

a thin layer of polyvinylchloride (PVC) is disposed upon an internal surface portion of said fabric.

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17. The universal thermal bulkhead assembly as set forth in Claim 2, further comprising:

15 edge seal means, disposed upon said first and second means bendably disposed upon said upper end portions of said first and second thermal bulkhead members, for defining sealed engagement with the ceiling member of the refrigerated cargo container when said first and second thermal bulkhead
20 members are disposed in said laterally overlapped mode with respect to each other.

25 18. The universal thermal bulkhead assembly as set forth in Claim 17, wherein:

each one of said edge seal means is encased within a fabric coated with a material selected from the group comprising neoprene, butyl, styrene-butadiene rubbers.

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19. The universal thermal bulkhead assembly as set forth in Claim 18, wherein:

a thin layer of polyvinylchloride (PVC) is disposed upon an internal surface portion of said fabric.

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20. The universal thermal bulkhead assembly as set forth in Claim 1, further comprising:

10 kickplate means fixedly secured to the lower end portion of each one of said first and second thermal bulkhead members for protection said lower end portions of said first and second thermal bulkhead members against abrasion during movement of said first and second thermal bulkhead members
15 relative to the floor region of the refrigerated cargo container.

20 21. The universal thermal bulkhead assembly as set forth in Claim 1, further comprising:

whisker brush means fixedly mounted upon lower end portions of said first and second thermal bulkhead members for effectively sealing the floor region of the refrigerated
25 cargo container when the floor region of the refrigerated cargo container comprises corrugated structure.

30 22. An expandable/contractible universal panel assembly for use within room chambers having different predetermined in-

terior width and height dimensions as respectively defined between oppositely disposed side wall members, and between oppositely disposed floor and ceiling members, comprising:

5 a first panel member having predetermined height and width dimensions;

first means bendably disposed upon an upper end portion of said first panel member for effectively varying said predetermined height dimension of said first panel member, when said first means is bent from a first position to a
10 second position, and for resiliently engaging the ceiling member of the room chamber;

a second panel member having predetermined height and width dimensions;

second means bendably disposed upon an upper end
15 portion of said second panel member for effectively varying said predetermined height dimension of said second panel member, when said second means is bent from a first position to a second position, and for resiliently engaging the ceiling member of the room chamber; and

20 means for adjustably connecting said first panel member with respect to said second panel member so as to adjustably vary the overall width dimension of said panel assembly, as defined by said first and second panel members, whereby said panel assembly comprises a universal panel assembly which can extend between and engage the oppositely
25 disposed side wall members, and which can extend between and engage the oppositely disposed floor and ceiling members, of a room chamber regardless of the fact that different room chambers can have different predetermined interior width and
30 height dimensions as respectively defined between the oppositely disposed side wall members, and between the oppositely

disposed floor and ceiling members.

5 23. The universal panel assembly as set forth in Claim 22,
wherein:

said first and second panel members are disposed in
a laterally overlapped mode so as to adjustably vary said
overall width dimension of said panel assembly; and

10 said means for adjustably connecting said first
panel member with respect to said second panel member is se-
lected from the group comprising at least one S-shaped ten-
sioning strap, at least one C-shaped tensioning strap, and
male and female fastening members.

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24. The universal panel assembly as set forth in Claim 22,
wherein:

20 said first means bendably disposed upon said upper
end portion of said first panel member, and said second means
bendably disposed upon said upper end portion of said second
panel member, comprise spring members.

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